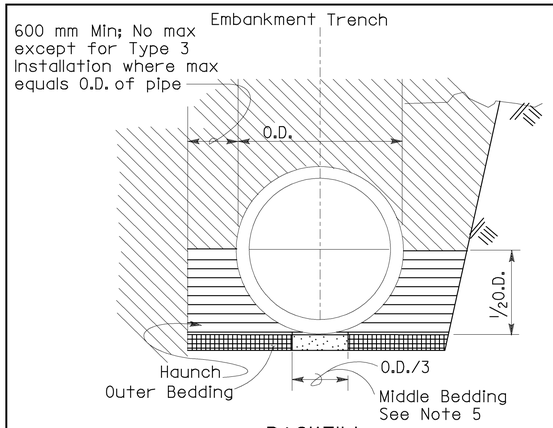
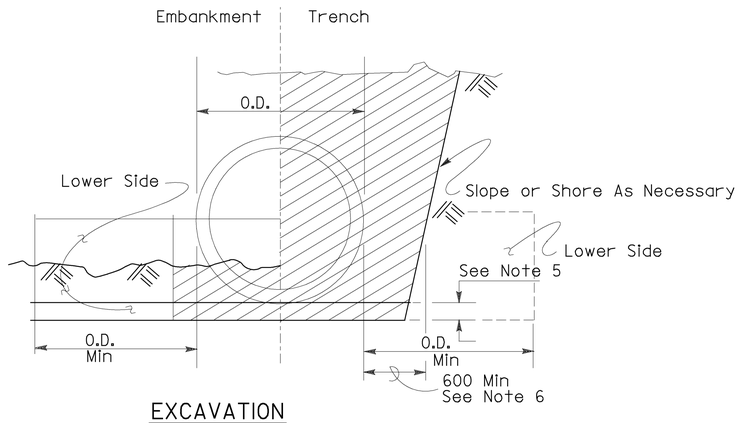


BACKFILL



EXCAVATION

Roadway Embankment

Structure Backfill (Culvert) See Note 6

Structure Backfill (Culvert) See Note 6

Loose Backfill

Excavation Structure (Culvert)

O.D. - Outside diameter of pipe.
RCP - Reinforced concrete pipe

TYPE 1 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12. Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.

TYPE 2 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25. Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.

TYPE 3 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25. If the sand equivalent is between 20 and 25, 90 percent relative compcation will be required. This installation may not be used where the fill over the pipe is less than ½ O.D. Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.

INSTALLATION TYPE 1

MINIMUM CLASS AND D-LOAD	COVER (IN METERS)	
	2700 DIA. AND SMALLER	OVER 2700 DIA
Class II 50D	4.50	4.00
Class III 65D	4.51 - 6.40	4.01 - 5.80
Class III Special 80D	6.41 - 8.20	5.81 - 7.60
Class IV 100D	8.21 - 9.70	7.61 - 9.10
Class IV Special 120D	9.71 - 12.50	9.11 - 11.90
Class V 140D	12.51 - 15.20	11.91 - 14.30
Class V Special 170D	15.21 - 18.00	14.31 - 17.70

INSTALLATION TYPE 2

MINIMUM CLASS AND D-LOAD	COVER (IN METERS)
Class II 50D	3.00
Class III 65D	3.01 - 4.60
Class III Special 80D	4.61 - 6.10
Class IV 100D	6.11 - 7.60
Class IV Special 120D	7.61 - 9.80
Class V 140D	9.81 - 11.90
Class V Special 170D	11.91 - 14.30

INSTALLATION TYPE 3

MINIMUM CLASS AND D-LOAD	COVER (IN METERS)	
	1200 DIA. AND SMALLER	OVER 1200 DIA
Class II 50D	2.40	1.80
Class III 65D	2.41 - 3.40	1.81 - 2.70
Class III Special 80D	3.41 - 4.60	2.71 - 4.00
Class IV 100D	4.61 - 5.50	4.01 - 4.90
Class IV Special 120D	5.51 - 6.70	4.91 - 6.10
Class V 140D	6.71 - 8.20	6.11 - 7.60
Class V Special 170D	8.21 - 10.00	7.61 - 9.50

Caltrans Metric

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Paul Cotter
REGISTERED CIVIL ENGINEER

October 26, 2000
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Paul Cotter — No. C34509 — Exp. 9-30-03 — CIVIL — STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated _____

NOTES:

1. Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.
   Example: 600 mm RCP culvert with maximum cover of 5.80 m the options are:
   a) Class III or stronger with installation Type 1.
   b) Class III Special or stronger with installation Type 2.
   c) Class IV Special or stronger with installation Type 3.
   Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
2. The class of RCP and installation Type selected shall be the same throughout the length of any given culvert.
3. The "length of any culvert" is defined as the culvert between:
   a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).
   b) A drainage structure and the inlet or outlet end of the culvert.
   c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
4. Oval and arch shaped RCP shall not be used.
5. O.D./25 min, not less than 75.
6. Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of O.D./25, but not less than 75 mm. Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
7. Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
8. Minimum cover over top of pipe at edge of traveled way shall be 600 mm for AC pavement and 300 mm for PCC pavement.
9. Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height, or sloped up to not less than 300 mm from the grading plane, the firmness of the soil in the lower side need not be considered.
10. Non-reinforced precast concrete pipe sizes 900 or smaller may be placed under installation types 1, 2 or 3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

RSP A62DA DATED OCTOBER 26, 2000 SUPERSEDES STANDARD PLAN A62DA DATED JULY 1, 1999-PAGE 20 OF THE STANDARD PLANS BOOK DATED JULY 1999.

REVISED STANDARD PLAN RSP A62DA

1999 REVISED STD. PLAN RSP A62DA